

Message Text

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ACTION AEC-11

INFO OCT-01 NEA-10 ISO-00 ACDA-19 CIAE-00 INR-10 IO-14

L-03 NSAE-00 NSC-10 RSC-01 SCI-06 SCEM-02 EPA-04

CEQ-02 DRC-01 /094 W

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R 020526Z JAN 74

FM AMCONSUL BOMBAY

TO SECSTATE WASHDC 4149

INFO AMEMBASSY NEW DELHI

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E.O. 11652: N/A

TAGS: TECH IN

SUBJ: REGULATORY STANDARDS FOR NUCLEAR POWER

REF BOMBAY 2452

1. I HAVE JUST RECEIVED LETTER DATE DEC 27 FROM CHAIRMAN ATOMIC POWER AUTHORITY J.C. SHAH FURTHER IN REGARD USAEC REQUEST CONTAINED DELHI 14364. LETTER QUOTED HEREAFTER.

2. "KINDLY REFER TO CHAIRMAN SETHNA'S LETTER NO. 622-73 OF 17TH INSTANT TO YOU. I HAVE PLEASURE IN SUPPLEMENTING THE INFORMATION GIVEN BY HIM WITH THE FOLLOWING, IN RESPONSE TO YOUR COMMUNICATION OF 11TH INSTANT.

3. "INDIA HAS THREE POWER REACTORS IN COMMERCIAL OPERATION AND THREE MORE ARE UNDER CONSTRUCTION. OF THE OPERATING REACTORS, TWO ARE OF BOILING LIGHT WATER TYPE, INSTALLED AT TARAPUR ATOMIC POWER STATION NEAR BOMBAY. THESE HAVE BEEN DESIGNED AND CONSTRUCTED BY GENERAL ELECTRIC, USA. THE THIRD IS A CANDU TYPE PRESSURISED HEAVY WATER NATURAL URANIUM REACTOR. IT FORMS THE FIRST OF TWO UNITS OF THE RAJASTHAN ATOMIC POWER STATION NEAR KOTA IN NORTH INDIA. OF THE THREE UNITS UNDER CONSTRUCTION, ONE WILL BE A REPEAT OF THE CANDU TYPE UNIT AT RAPS AND TWO MORE

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OF AN IMPROVED CANDU DESIGN AT THE MADRAS ATOMIC POWER

STATION AT KALPAKKAM NEAR MADRAS IN SOUTH INDIA.

4. "THE TWO BWR'S AT TARAPUR ARE 660.9 MW THERMAL (210 MWE) UNITS WHEREAS THE CANDU UNIT AT RAPS ARE 693.5 MW THERMAL (220 MWE).

5. "THE BWRS AT TARAPUR WENT IN COMMERCIAL OPERATION IN OCTOBER 1969. THEIR PERFORMANCE UNTIL APRIL 1971 WAS SATISFACTORY DESPITE SOME INITIAL TROUBLES IN THE SWITCHYARD (WHICH DOES NOT FORM PART OF THE PROJECT) WHICH RESTRICTED THE STATION OUTPUT. THE PERFORMANCE SINCE THEN UNTIL MAY 1973 WAS SUBNORMAL AND MAINLY

TO DESIGN RELATED PROBLEMS ON REACTOR INTERNALS AND FIRST REFUELLINGS OF BOTH REACTORS. WHILE THESE HAVE BEEN LARGELY OVERCOME, THE CONSEQUENCES OF UNSATISFACTORY FUEL SUPPLIED IN THE ORIGINAL BATCH ARE STILL PERSISTING. AFTER COMPLETION OF THE SECOND REFUELLING OF UNIT 1 IN MAY 1973, THE PERFORMANCE OF BOTH UNITS WAS VERY PROMISING. IT WAS CUT SHORT BY EXTENSIVE MAL-FUNCTIONING OF THE TRANSMISSION SYSTEM DUE PROBABLY TO SALT POLLUTION. THE ADVERSE EFFECTS ON THE STATION WERE LARGELY RECTIFIED BY SEPTEMBER 1973 AND THEREAFTER THE UNITS HAVE BEEN OPERATING SATISFACTORILY EXCEPT FOR THE RESTRICTIONS IMPOSED BY UNSATISFACTORY FUEL. INCIDENTALLY, THE ENTIRE FUEL USED IN BOTH THE REACTORS SO FAR HAS BEEN SUPPLIED BY GENERAL ELECTRIC OF USA.

6. "THE FIRST UNIT OF RAJASTHAN WENT CRITICAL ON AUGUST 11, 1972, FIRST GENERATED ELECTRICITY ON NOVEMBER 30, 1972 AND IS IN COMMERCIAL OPERATION FROM 16TH DECEMBER 1973. THE COMMISSIONING PERIOD HAS BEEN SOMEWHAT LONGER THAN NORMAL DUE LARGELY TO DESIGN AND MANUFACTURING WEAKNESSES IN TURBINE BEARINGS AS WELL AS EXTENSIVE DISTURBANCES TO ITS OPERATIONS CAUSED BY THE GRID IN THIS CRITICAL PERIOD. INTERNAL WEAKNESSES HAVE BEEN LARGELY SET RIGHT IN COURSE OF THE RECENT OUTAGE.

7. "THE RELEVANT STATISTICAL INFORMATION PERTAINING TO THE PLANT IS AS FOLLOWS:

TARAPUR ATOMIC POWER STATION

INSTALLED CAPACITY: 2X210 MWE OR 2 X 660.9 MW(TH)
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CALENDAR YEAR	ELECTRICAL POWER GENERATION KWH X 106	PLANT/CAPABILITY FACTOR (PERCENTAGE)	PLANT AVAILABILITY FACTOR (PERCENTAGE)	UNIT I	UNIT II
1970	2177.533	59.2	83.8	80.7	

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1971	1789.990	48.6	58.9	67.8
1972	870.990	23.63	57.35	27.18
1973 (UP TO NOVEMBER)	1811.719	53.81	57.66	83

RAJASTHAN ATOMIC POWER STATION

INSTALLED CAPACITY: 1 X 220 MWE OR 1 X 693.5 MW(TH)

PERIOD	ELECTRICAL POWER GENERATION KWH X 106
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DECEMBER 1972	0.65
1973 (UP TO NOVEMBER 30)	190.949

8. "THERE HAVE BEEN NO NUCLEAR ACCIDENTS AT TARAPUR OR RAJASTHAN SO FAR.

9. "THERE WAS A FATAL ACCIDENT IN TARAPUR IN JULY 1970 ARISING OUT OF CONTAINMENT INERTING WHICH HAS RAISED SERIOUS DOUBTS ON THE APPROPRIATENESS OF THE INERTING PHILOSOPHY, PARTICULARLY UNDER INDIAN CONDITIONS.

10. "THE MAJOR OUTAGES AT TARAPUR SO FAR HAVE BEEN NECESSITATED BY REFUELLINGS AND NEED FOR SOME WORK ON REACTOR INTERNALS. BY THEMSELVES THESE OUTAGES HAVE HAD NO UNUSUAL ENVIRONMENTAL IMPACT BUT AS MENTIONED EARLIER, THE UNSATISFACTORY QUALITY OF THE INITIAL FUEL BATCH HAS LED TO ACTIVITY DISCHARGES, PARTICULARLY OF WATER, WHICH ARE HIGHER THAN THE ORIGINALLY ESTIMATED VALUES. THE SAME FACTORS ALSO CAUSED HIGHER BACKGROUND RADIATION IN SOME AREAS OF THE STATION. HOWEVER, THESE HAVE BEEN KEPT WELL BELOW LIMITED OFFICIAL USE

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THE PERMISSIBLE ICRP AS WELL AS TECHNICAL SPECIFICATIONS LEVELS.

11. "THE FEED-BACK FROM THE ENVIRONMENTAL MONITORING STATION WHICH WAS SET UP WELL BEFORE TARAPUR WENT INTO OPERATION AND WHICH CLOSELY SURVEYS SELECTION ENVIRONMENTAL INDICES FOR THIS PURPOSE, HAS NOT REPORTED ANY SIGNIFICANT ADVERSE ENVIRONMENTAL IMPACT MAINLY BECAUSE OF CAREFUL MONITORING AT SOURCE."

SIGNED J.C. SHAH.
BANE

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Message Attributes

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Draft Date: 02 JAN 1974
Decaption Date: 01 JAN 1960
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